

REMARKS

By this amendment, Applicants have amended the specification to delete reference therein to the claims and to correct clerical errors at paragraphs 0025 and 0026. Applicants have amended the claims to delete the reference numerals therefrom.

Applicants affirm their provisional election to prosecute the inventions of Groups II, III and V, i.e., claims 2, 3 and 5.

Claims 2, 3 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,476,563 to Nakata et al. in view of U.S. Patent No. 4,376,834 to Goldwasser et al. and further in view of U.S. Patent Application Publication Number 2003/0106740 A1 to Tabata et al. Applicants traverse this rejection and request reconsideration thereof.

The rejected claims relate to a method and apparatus for producing an elastic strip material. As set forth claims 2 and 3, the method of producing an elastic strip material includes preparing a heat setting composition whose principal ingredients are a polyurethane prepolymer and a latent solidifier obtained by deactivating a solid polyamine, so that a fluid mixture 'a' is formed by dispersing a compressed gas throughout the heat setting composition. The fluid mixture 'a' is extruded from a nozzle of a resin extruder so that an extruded stream of a desired diameter immediately foams itself. The stream is subsequently guided before it is solidified into a heating zone whose interior has been heated to or above a critical solidification temperature so that the stream thus heated is allowed to solidify and simultaneously is pressed into a desired peripheral shape while advancing through the heating zone. Finally, the foam solidified and pressed stream is discharged from the heating zone to be cooled down to an ambient room temperature, thereby giving the elastic strip material. Claim 3 recites that the heating zone is a liquid heating zone.

The apparatus for producing an elastic strip material includes, as shown by way of example only in the figures, a resin extruder (1), a liquid tank (21) having an cooperating with at least one rotor (22), a motor (23) for driving the rotor (22) to rotate *in*

situ, and a heating bath (2A) including the liquid tank, the resin extruder (1) comprising reservoir (11) for storing therein an amount of a heat-setting composition, a gas feeding pipe (12) for charging the reservoir with a compressed gas, and a nozzle (1a) for extruding a fluid mixture 'a' to form a resin stream, the rotor (22) being constructed such that the resin stream of fluid mixture 'a' effluent from the nozzle (1a) and having already foamed but not yet solidified is guided into a hot liquid (2a) held in the liquid tank (21) and caused to advance through it, the heating bath (2A) having therein a trough (24) formed in and along the periphery of the rotor (22) so as to receive the resin stream of fluid mixture 'a', and a surface shaping member (25) disposed close to and facing the trough (24) so that the fluid mixture 'a' is heated in the heating bath (2A) so as to solidify therein and form a resin strip 'b', the heating bath (2A) further comprising an outlet guide (26) for directing the resin strip 'b' towards the outside of the liquid tank (21), thereby giving the elastic strip material.

The Nakata patent does not disclose a method or apparatus for producing an elastic strip material. To the contrary, the Nakata patent relates to making a door mat comprising an integral mass of loops of synthetic resin monofilaments which includes a surface layer having a decorative pattern on its upper side and the reverse surface layer having its upper side joined to the lower side of the surface layer. The under side of the reverse surface may be joined to an anti-slip layer, which may be in the form of a lattice layer. While this patent discloses extruding fused soft vinyl chloride resin and spinning filaments, it does not relate to a method or apparatus for producing an elastic strip material from a heat-setting composition.

Rather than a method or apparatus in which the heat setting composition is heated to solidify and shape the composition, the Nakata patent teaches the use of a cooling water tank. Moreover, there is no disclosure of a method in which a polyurethane prepolymer and a latent solidifier obtained by deactivating a solid polyamine is extruded with an dispersed compressed gas. Likewise, there is no reservoir for storing a heat-setting composition or a gas feeding pipe for charging the

reservoir with a compressed gas in the apparatus described in Nakata. Nakata has absolutely nothing to do with forming a foamed heat setting composition.

The Goldwasser et al. patent relates to polyurethane resins having high impact strength and other structural strength properties, and significantly improved resistance to deformation by heat. There is no disclosure of a method or apparatus for forming an elastic strip material. Moreover, it is submitted the teachings of Nakata and Goldwasser et al. are not readily combinable. The Goldwasser et al. patent relates to forming a structural components while, in Nakata, the extruder extrudes a fused soft vinyl chloride resin. It is submitted there would have been no reason to substitute a high impact strength structural material for the soft vinyl chloride resin extruded in Nakata. Moreover, even the proposed combination would not have rendered obvious a method or apparatus in which the heat setting composition is foamed and extruded into a stream and guided into a heating zone so that the stream is heated and allowed to solidify and be pressed into a desired peripheral shape.

The Tabata et al. patent discloses a speaker edge made of a thermosetting composition consistent with a polyurethane prepolymer and an inactivated solid polyamine as a latent hardener. A gas is dispersed in the thermosetting composition, prior to feeding in a mold, so that it can foam and solidify to give the speaker edge. In the first place, it is submitted there would have been no reason to use the thermosetting composition of Tabata et al. in place of the soft vinyl chloride resin in Nakata. Moreover, nothing in the Tabata et al. publication discloses a method or apparatus for solidifying an elastic strip material in a heated fluid. It is submitted that the teachings of Nakata, Goldwasser et al. and Tabata would not have been combined by one of ordinary skill in the art. Even assuming, *arguendo*, that the teachings of one of these documents would have been combined by one of ordinary skill in the art, it is submitted the combined teachings would not have rendered obvious the presently claimed method and apparatus for solidifying a heat setting composition in a heating zone in the manner presently claimed.

For the foregoing reasons, it is submitted the presently claimed invention is patentable over the proposed combination of documents.

Applicants note the Examiner has cited a number of documents as being pertinent to applicants' disclosure. However, since these documents were not applied in rejecting the claims formerly in the application, further discussion of these documents is deemed unnecessary.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of the claims now in the application are requested.

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Respectfully submitted,

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